LIST OF CLAIMS / AMENDMENTS

Claims 2-3, 19, 28, 43, and 46-47 were canceled previously.

Please amend claims 1, 12-13, 16, 24, 26, 34-35, 37, 40, 42, and 44 as shown herein.

Claims 1, 4-18, 20-27, 29-42, 44-45, and 48-52 are pending and are listed following:

1. (currently amended) A printing device, comprising:

a pen configured to move in a carriage direction back and forth over a width of a print media to transfer an imaging medium onto [[a]] the print media to form printed diagnostic images that each include at least a first print swath image and a second print swath image;

a sensor configured to scan ~~along a horizontal axis of~~ in the carriage direction over the print media to detect pen swath optical densities from non-printed space of the print media and the printed diagnostic images, the pen swath optical density of a printed diagnostic image being detected from the at least first print swath image, the second print swath image, and the non-printed space of the print media proximate the at least first print swath image and the second print swath image;

an application component configured to determine an error compensation factor from the pen swath optical densities of the printed diagnostic images; and

a print media line-feed advance configured to be offset corresponding to the error compensation factor.

2-3. (canceled)

4. **(previously presented)** A printing device as recited in claim 1, wherein the pen is further configured to form a printed diagnostic image with overlapping print swath images.

5. **(previously presented)** A printing device as recited in claim 1, wherein the sensor is further configured to detect pen swath optical densities from multiple sets of print swath images that form each of the printed diagnostic images, each set of print swath images printed at a different print media line-feed advance offset.

6. **(previously presented)** A printing device as recited in claim 1, wherein the sensor is further configured to detect pen swath optical densities from multiple sets of print swath images that form each of the printed diagnostic images, each set of print swath images having a different detectable spacing increment.

7. **(previously presented)** A printing device as recited in claim 1, wherein the pen is further configured to form a printed diagnostic image with first print swath images and second print swath images, the second print swath images being printed after the first print swath images and after a print media line-feed advance.

8. (previously presented) A printing device as recited in claim 1, wherein the pen is further configured to form a printed diagnostic image with first print swath images and second print swath images, and wherein the sensor is further configured to detect different pen swath optical densities from an overlap of the first print swath images and corresponding second print swath images.

9. (previously presented) A printing device as recited in claim 1, wherein the pen is further configured to form a printed diagnostic image with first print swath images and second print swath images, and wherein the sensor is further configured to detect different pen swath optical densities from an alignment of the first print swath images with corresponding second print swath images.

10. (previously presented) A printing device as recited in claim 1, wherein the pen is further configured to form a printed diagnostic image with first print swath images and second print swath images, the second print swath images printed after the first print swath images and after a print media line-feed advance, and wherein the sensor is further configured to detect different pen swath optical densities from an offset between the first print swath images and corresponding second print swath images.

11. (previously presented) A printing device as recited in claim 1, wherein the application component is further configured to average multiple pen swath optical densities of the printed diagnostic images to determine the error compensation factor.

12. (currently amended) A printing device as recited in claim 1, further comprising at least a second pen configured to move in the carriage direction back and forth over the width of a print media to transfer the imaging medium onto the print media to form second printed diagnostic images that each include print swath images, wherein:

the sensor is further configured to scan ~~along the horizontal axis of~~ in the carriage direction over the print media to detect second pen swath optical densities from additional non-printed space of the print media and the second printed diagnostic images, the second pen swath optical densities of the second printed diagnostic images being detected from the print swath images of the second pen and the additional non-printed space of the imaging medium proximate the print swath images of the second pen;

the application component is further configured to determine a second error compensation factor from the second pen swath optical densities of the second printed diagnostic images;

the application component is further configured to determine an optimal error compensation factor from the error compensation factor and the second error compensation factor; and

the print media line-feed advance is further configured to be offset corresponding to the optimal error compensation factor.

13. (currently amended) A printing device as recited in claim 1, further comprising at least a second pen configured to move in the carriage direction back and forth over the width of a print media to transfer the imaging medium onto the print media to form second printed diagnostic images that each include print swath images, wherein:

the sensor is further configured to scan ~~along the horizontal axis of~~ in the carriage direction over the print media to detect second pen swath optical densities from additional non-printed space of the print media and the second printed diagnostic images, the second pen swath optical densities of the second printed diagnostic images being detected from the print swath images of the second pen and the additional non-printed space of the imaging medium proximate the print swath images of the second pen;

the application component is further configured to determine a second error compensation factor from the second pen swath optical densities of the second printed diagnostic images; and

the print media line-feed advance is further configured to be offset corresponding to the second error compensation factor.

14. (previously presented) A printing device as recited in claim 13, wherein the application component is further configured to average the pen swath optical densities and the second pen swath optical densities to determine an averaged error compensation factor.

15. (previously presented) A printing device as recited in claim 13, wherein the application component is further configured to average the pen swath optical densities and the second pen swath optical densities to determine an averaged error compensation factor, and wherein the print media line-feed advance is further configured to be offset corresponding to the averaged error compensation factor.

16. (currently amended) A printing device, comprising:

a pen configured to move in a carriage direction back and forth over a width of a print media to transfer an imaging medium onto [[a]] the print media to form a printed diagnostic image which includes printing first swath images on the print media, advancing the print media, and printing second swath images on the print media, the first swath images and the second swath images being printed to form the printed diagnostic image;

a sensor configured to scan ~~along a horizontal axis of~~ in the carriage direction over the print media to detect pen swath optical densities from non-printed space of the print media and the printed diagnostic image, the pen swath optical densities of the printed diagnostic image being detected from the first swath images, the second swath images, and the non-printed space of the print media proximate the first swath images and the second swath images; and

an application component configured to determine a pen swath height error compensation factor from the pen swath optical densities of the printed diagnostic image, the application component further configured to determine a print media line-feed advance offset from the pen swath height error compensation factor.

17. **(original)** A printing device as recited in claim 16, wherein the pen is further configured to transfer the imaging medium onto the print media to form multiple sets of printed diagnostic images, and wherein the sensor is further configured to detect the pen swath optical densities from the multiple sets of printed diagnostic images.

18. **(previously presented)** A printing device as recited in claim 16, wherein the pen is further configured to print the first swath images and at least the second swath images to form the printed diagnostic image.

19. **(canceled)**

20. **(previously presented)** A printing device as recited in claim 16, wherein the sensor is further configured to detect different pen swath optical densities from an overlap of the first swath images and the corresponding second swath images.

21. **(previously presented)** A printing device as recited in claim 16, wherein the sensor is further configured to detect different pen swath optical densities from an alignment of the first swath images with the corresponding second swath images.

22. **(previously presented)** A printing device as recited in claim 16, wherein the sensor is further configured to detect different pen swath optical densities from an offset between the first swath images and the corresponding second swath images.

23. (original) A printing device as recited in claim 16, wherein the application component is further configured to average multiple pen swath optical densities to determine the print media line-feed advance offset.

24. (currently amended) A printing device as recited in claim 16, further comprising at least a second pen configured to move in the carriage direction back and forth over the width of a print media to transfer ~~an~~ the imaging medium onto the print media to form a second printed diagnostic image, wherein:

the sensor is further configured to scan ~~along the horizontal axis of~~ in the carriage direction over the print media to detect second pen swath optical densities from the second printed diagnostic image; and

the application component is further configured to determine an optimal print media line-feed advance offset from the pen swath optical densities and the second pen swath optical densities.

25. (original) A printing device as recited in claim 24, wherein the application component is further configured to average the pen swath optical densities and the second pen swath optical densities.

26. (currently amended) A method to correct printing mechanism swath height and line-feed advance errors, comprising:

printing a diagnostic image on a print media by moving a pen in a carriage direction back and forth over a width of the print media, the diagnostic image formed with first swath images and second swath images;

detecting pen swath optical densities from non-printed space of the print media and the diagnostic image by scanning ~~along a horizontal axis of~~ in the carriage direction over the print media, the pen swath optical densities being detected from the first swath images, the second swath images, and the non-printed space of the print media proximate the first swath images and the second swath images;

determining an error compensation factor from the pen swath optical densities of the diagnostic image; and

offsetting a print media line-feed advance corresponding to the error compensation factor.

27. (original) A method as recited in claim 26, further comprising printing multiple sets of diagnostic images on the print media, and wherein detecting includes detecting the pen swath optical densities from the multiple sets of diagnostic images.

28. (canceled)

29. (previously presented) A method as recited in claim 26, wherein printing includes printing the first swath images on the print media, advancing the print media, and printing the second swath images on the print media.

30. (previously presented) A method as recited in claim 26, wherein detecting includes detecting different pen swath optical densities from an overlap of the first swath images and corresponding second swath images.

31. (previously presented) A method as recited in claim 26, wherein detecting includes detecting different pen swath optical densities from an alignment of the first swath images with corresponding second swath images.

32. (previously presented) A method as recited in claim 26, wherein printing includes printing the first swath images on the print media, advancing the print media, and printing the second swath images on the print media, and wherein detecting includes detecting different pen swath optical densities from an offset between the first swath images and corresponding second swath images.

33. (original) A method as recited in claim 26, wherein determining includes averaging multiple pen swath optical densities to determine the error compensation factor.

34. **(currently amended)** A method as recited in claim 26, further comprising printing a second diagnostic image on the print media by moving a second pen in a carriage direction back and forth over the width of the print media, wherein:

detecting includes detecting second pen swath optical densities from the second diagnostic image;

determining includes determining an optimal error compensation factor from the pen swath optical densities and the second pen swath optical densities; and

offsetting includes offsetting the print media line-feed advance corresponding to the optimal error compensation factor.

35. **(currently amended)** A method as recited in claim 26, further comprising printing a second diagnostic image on the print media with at least a second pen by moving the second pen in a carriage direction back and forth over the width of the print media, wherein:

detecting includes detecting second pen swath optical densities from the second diagnostic image;

determining includes determining a second error compensation factor from the second pen swath optical densities; and

offsetting includes offsetting the print media line-feed advance corresponding to the second error compensation factor.

36. (original) A method as recited in claim 35, wherein determining further includes averaging the pen swath optical densities and the second pen swath optical densities to determine an averaged error compensation factor, and wherein offsetting further includes offsetting the print media line-feed advance corresponding to the averaged error compensation factor.

37. (currently amended) A method to determine a printing device media line-feed advance offset, comprising:

printing first swath images and second swath images by moving a pen in a carriage direction back and forth over a width of a print media;

detecting a first optical density correlating to a first offset between the first swath images and corresponding second swath images by scanning in the carriage direction over the print media along a horizontal axis relative to the swath images, the first optical density being detected from the first swath images, the second swath images, and non-printed space proximate the first swath images and the second swath images;

detecting at least a second optical density correlating to a second offset between the first swath images and corresponding second swath images by scanning in the carriage direction over the print media along the horizontal axis relative to the swath images, the second optical density being detected from the first swath images, the second swath images, and non-printed space proximate the first swath images and the second swath images; and

determining the printing device media line-feed advance offset from the detected optical densities.

38. (original) A method as recited in claim 37, wherein determining includes averaging the detected optical densities.

39. (original) A method as recited in claim 37, wherein determining includes selecting a lowest optical density value from the detected optical densities.

40. (currently amended) A method as recited in claim 37, wherein printing includes printing the first swath images and second swath images with ~~one~~ the pen to form a diagnostic image.

41. (original) A method as recited in claim 37, further comprising detecting multiple optical densities correlating to multiple different offsets between the first swath images and corresponding second swath images, and wherein determining includes determining an optimal optical density from the detected multiple optical densities.

42. (currently amended) One or more computer-readable media comprising computer executable instructions that, when executed, direct a printing device to perform a method comprising:

detecting pen swath optical densities from a printed diagnostic image ~~formed~~ printed with first swath images and second swath images by a pen moving in a carriage direction back and forth over a width of a print media, said detecting when scanning in the carriage direction over the print media along a horizontal axis relative to the swath images, the pen swath optical densities being detected from the first swath images, the second swath images, and non-printed space proximate the first swath images and the second swath images;

determining a pen swath height and print media line-feed advance error compensation factor from the pen swath optical densities detected from the printed diagnostic image; and

offsetting a print media line-feed advance corresponding to the error compensation factor.

43. (canceled)

44. (currently amended) One or more computer-readable media comprising computer executable instructions that, when executed, direct a printing device to perform a method to correct printing mechanism swath height and line-feed advance errors, comprising:

printing a diagnostic image on a print media which includes printing first swath images on the print media, advancing the print media, and printing second swath images on the print media, the first swath images and the second swath images forming the diagnostic image when printing in a carriage direction back and forth over a width of the print media to print the diagnostic image;

detecting pen swath optical densities from the diagnostic image by scanning in the carriage direction over the print media along a horizontal axis of the print media, the pen swath optical densities being detected from the first swath images, the second swath images, and non-printed space of the print media proximate the first swath images and the second swath images; and

determining a line-feed advance offset from the pen swath optical densities.

45. (original) One or more computer-readable media as recited in claim 44, wherein the method further comprises printing multiple sets of diagnostic images on the print media, and wherein detecting includes detecting the pen swath optical densities from the multiple sets of diagnostic images.

46-47. (canceled)

48. (previously presented) One or more computer-readable media as recited in claim 44, wherein detecting includes detecting different pen swath optical densities from an overlap of the first swath images and corresponding second swath images.

49. (previously presented) One or more computer-readable media as recited in claim 44, wherein detecting includes detecting different pen swath optical densities from an alignment of the first swath images with corresponding second swath images.

50. (previously presented) One or more computer-readable media as recited in claim 44, wherein detecting includes detecting different pen swath optical densities from an offset between the first swath images and corresponding second swath images.

51. (original) One or more computer-readable media as recited in claim 44, wherein determining includes averaging multiple pen swath optical densities to determine the line-feed advance offset.

52. (original) One or more computer-readable media as recited in claim 44, wherein the method further comprises printing a second diagnostic image on the print media, wherein:

detecting includes detecting second pen swath optical densities from the second diagnostic image; and

determining includes determining an optimal line-feed advance offset from the pen swath optical densities and the second pen swath optical densities.